

WHAT IS CLAIMED IS:

1. A bicycle hub dynamo comprising:
 - a hub spindle adapted to be mounted to a frame of the bicycle;
 - a hub body disposed around the hub spindle, wherein the hub body has a first end and a second end, and wherein the hub body has a pair of axially spaced hub flanges;
 - a plurality of bearings disposed between the hub body and the hub spindle for rotatably supporting the hub body relative to the hub spindle;
 - a generating mechanism disposed between the hub body and the hub spindle, wherein the generating mechanism generates electricity in response to rotation of the hub body relative to the hub spindle; and
 - a freewheel disposed on a first side of the hub body, wherein the freewheel is adapted to mount a plurality of sprockets.
2. The dynamo according to claim 1 further comprising a brake device mounting member disposed on a second side of the hub body.
3. The dynamo according to claim 2 further comprising a brake disk coupled to the brake device mounting member.
4. The dynamo according to claim 2 further comprising a brake drum coupled to the brake device mounting member.
5. The dynamo according to claim 2 further comprising a roller brake coupled to the brake device mounting member.
6. The dynamo according to claim 1 wherein the hub body includes an opening disposed on at least one of the first end and the second end of the hub body, wherein the opening is dimensioned for receiving at least a portion of the generator therethrough.
7. The dynamo according to claim 6 further comprising a cover member detachably coupled to the at least one of the first end and the second end of the hub body.

8. The dynamo according to claim 7 wherein the opening and the cover member are disposed at the first end of the hub body, and wherein the freewheel is mounted to the cover member.

9. The dynamo according to claim 8 wherein the hub body has a threaded portion that engages a threaded portion of the cover member.

10. The dynamo according to claim 9 wherein the hub body has a female threaded portion that engages a male threaded portion of the cover member.

11. The dynamo according to claim 10 wherein the female threaded portion is a right-hand threaded portion.

12. The dynamo according to claim 7 wherein the opening and the cover member are disposed at the second end of the hub body.

13. The dynamo according to claim 12 further comprising a brake device mounting member disposed on the cover member.

14. The dynamo according to claim 13 wherein the hub body has a threaded portion that engages a threaded portion of the cover member.

15. The dynamo according to claim 14 wherein the hub body has a female threaded portion that engages a male threaded portion of the cover member.

16. The dynamo according to claim 15 wherein the female threaded portion is a right-hand threaded portion.

17. The dynamo according to claim 1 wherein the hub body comprises:
a first cylindrical portion that houses the generating mechanism; and
a second cylindrical portion having a smaller diameter than the first cylindrical portion.

18. The dynamo according to claim 17 further comprising a brake device mounting member disposed on the first cylindrical portion.

19. The dynamo according to claim 1 wherein the generating mechanism comprises:
a magnet disposed on an inner peripheral surface of the hub body; and
a stator unit disposed radially inwardly of the magnet.

20. The dynamo according to claim 19 wherein the stator unit comprises:
a coil disposed radially inwardly of the magnet;
a yoke surrounding the coil, wherein the magnet rotates relative to the yoke around an axis, wherein the yoke comprises:

a plurality of laminated first yoke arms disposed on a first axial side of the coil, each first yoke arm having a first yoke arm radially outer portion and a first yoke arm radially inner portion, and each first yoke arm comprising a plurality of laminated first plate-shaped pieces;

a plurality of laminated second yoke arms disposed on a second axial side of the coil, each second yoke arm having a second yoke arm radially outer portion and a second yoke arm radially inner portion, and each second yoke arm comprising a plurality of laminated second plate-shaped pieces;

wherein each first yoke arm radially inner portion faces a corresponding second yoke arm radially inner portion in the axial direction;

wherein the plurality of first yoke arm radially outer portions extend axially toward the second axial side of the coil;

wherein the plurality of second yoke arm radially outer portions extend axially toward the first axial side of the coil; and

wherein the plurality of first yoke arm radially outer portions are interleaved with the plurality of second yoke arm radially outer portions in a circumferential direction.